

ANGELINA HOLLY CORP.

IBLA 82-544

Decided January 27, 1983

Appeal from decision of the New Mexico State Office, Bureau of Land Management, rejecting oil and gas lease offers NMA 40368 TX, NMA 40369 TX, NMA 40370 TX, NMA 40373 TX, NMA 40374 TX, and NMA 40375 TX.

Affirmed.

1. Oil and Gas Leases: Applications: Generally -- Oil and Gas Leases: Known Geologic Structure -- Oil and Gas Leases: Noncompetitive Leases

Under 30 U.S.C. § 226(b) (1976) land within the known geologic structure of a producing oil or gas field may only be leased by competitive bidding, and where land is determined to be within such a structure while a noncompetitive lease offer is pending, the offer must be rejected.

2. Oil and Gas Leases: Applications: Generally -- Oil and Gas Leases: Known Geologic Structure -- Oil and Gas Leases: Noncompetitive Leases

An applicant for a noncompetitive oil and gas lease who challenges a determination by the Geological Survey that land is within the known geologic structure of a producing oil or gas field has the burden of showing that the determination is in error.

APPEARANCES: W. L. Smith, President, Angelina Holly Corporation, Houston, Texas, for appellant; John H. Harrington Esq., Office of the Field Solicitor, U.S. Department of the Interior, Sante Fe, New Mexico, for Bureau of Land Management.

OPINION BY ADMINISTRATIVE JUDGE FRAZIER

This appeal is taken from a decision dated February 3, 1982, by the New Mexico State Office, Bureau of Land Management (BLM), rejecting acquired

lands noncompetitive oil and gas lease offers NMA 40368 TX, NMA 40369 TX, NMA 40370 TX, NMA 40373 TX, NMA 40374 TX, and NMA 40375 TX, because the land sought had been determined by Geological Survey (Survey) to be "within an extension to the undefined known geologic structure of the Giddings Field, effective December 1, 1981." ^{1/}

The formation involved is the Austin Chalk. Appellant contends that it is not a geological structure but a fracture system. He has submitted letters from various petroleum consultants and geologists who support him in his opinion that the Austin Chalk may or may not be productive and is not a known structure. One of the letters, by an exploration consultant, asserts that Survey's opinion is based on hearsay and suggests that Survey should avail itself of more subsurface information. Another letter, dated July 20, 1981, from a consulting geologist states in part:

The Austin Chalk has been of interest to oilmen since the early 1930's. With increasing oil prices and newly developed technological advances, interest in Austin Chalk production began in earnest in 1973. Since that time over 400 wells have been drilled for Austin Chalk production, with a remarkably high success ratio. This success ratio is in part due to the fact that seismic exploration has advanced to a point where the location of fractures can be more readily determined. The fractures increase the permeability as well as the porosity of the chalk and thereby make the difference between a producing well and a test which encounters the chalk but in a tight and impermeable condition.

It is completely unwarranted to refer to the entire Austin Chalk trend in Fayettee, Lee and Burleson Counties as one oil field. There are numerous dry holes which have been drilled in this chalk trend. Production is based primarily on the nature of the natural fracture pattern and this initial fracture pattern is not found throughout the area. The chalk is present throughout Fayettee, Lee and Burleson Counties but it is not productive everywhere. Hence, production is dependent upon local conditions and one cannot refer to the entire Austin Chalk trend as one field.

In a letter dated October 23, 1981, the Director, Oil and Gas Division of the Texas Railroad Commission, states, with respect to the Giddings area, that "each of the fracture systems is probably a separate entity" and "that development in this particular area is not based on structure, but drilling in the vicinity of a fracture system."

Another letter dated March 4, 1982, states in part:

The Austin Chalk is by no means one huge geologic structure underlying many hundreds of square miles of the surface. There

^{1/} "Known geologic structure" is defined in 43 CFR 3100.0-5(a) as "technically the trap in which an accumulation of oil or gas has been discovered by drilling and determined to be productive, the limits of which include all acreage that is presumptively productive."

are many, many dry areas to contend with in the Austin Chalk. It has only been the price increases since 1973 which have enabled the oil industry to undertake serious exploration of the chalk.

If statistics are considered, Lake Somerville is most likely lying over a geological low area rather than over a geologic structure or structures. There is a known general relationship between the river systems and geologic structure at depth.

In conclusion, let me state that I am worried about the consequences of the U.S.G.S. opinion on Lake Somerville should some innocent third party acquire drilling rights to the lake through an expensive bidding situation only to find out later after the investment of extensive drilling funds that no such "known geologic structure" is in fact "known" at all.

[1] Under 30 U.S.C. § 226(b) (1976), land within the known geological structure (KGS) of a producing oil and gas field may only be leased by competitive bidding. When land is determined to be within a KGS either before a noncompetitive offer was filed or while such an offer is pending, the noncompetitive offer must be rejected. Bruce Anderson, 63 IBLA 111 (1982), Richard J. DiMarco, 53 IBLA 130 (1981), aff'd, DiMarco v. Watt, Civ. No. 81-2243 (D.D.C. Mar. 25, 1981).

[2] An applicant for an oil and gas lease who challenges a determination by Survey that the lands are situated within the KGS of a producing oil or gas field has the burden of showing that the determination is in error. The determination will not be disturbed in the absence of a clear and definite showing of error. Bruce Anderson, supra.

Counsel for BLM submitted a copy of a memorandum from the District Supervisor, Resource Evaluation, Minerals Management Service (MMS), 2/ Tulsa, Oklahoma, dated April 16, 1982, which provided supporting documentation for the KGS determination. That memorandum provided in part:

Regionally, the Giddings Field is located on the Gulf Coast monocline or flexure that, generally, parallels the present-day coastline. Recent aerial magnetic surveys (Jenny, 1982, p. 212) indicate a large, extended basement anticline below the Giddings Field. If the anticline is predepositional, draping and differential settling of the overlying sediments could have induced adjustment faulting of these beds. If the basement anticline occurred after deposition of the overlying sediments, arching of the basement could have also induced adjustment faulting of the

2/ By Secretarial Order No. 3071 published in the Federal Register on Feb. 2, 1982, 47 FR 4751, the Secretary created the Minerals Management Service (MMS) to, inter alia, take over the functions of the Conservation Division, Geological Survey. Further reference in the decision will be to Survey, since the Conservation Division, Geological Survey, was in existence during the relevant determination. By order No. 3087 (Dec. 3, 1982), the Secretary abolished the Minerals Management Board and transferred some MMS functions to BLM.

overlying beds, possibly taking form as listric and antithetic faults. Stratigraphically, within the Austin Chalk Formation exists extensive lithologic facies and thickness variations. These alone, or in combination with the fracture-fault system could also create hydrocarbon traps.

Stapp (1978, p. 55), suggests that Austin Chalk-Buda Limestone production depends on finding areas with highly fractured pays. These fractures may be in response to deep seated structural features, faults within the pay zones, or they may be textural fractures not directly related to faulting. This investigator also states that in the Austin Chalk there are two kinds of occurrences of oil accumulation. One involves the textbook type closures where there is porosity. The second, where the large part of the trend is downdip, the oil has accumulated in fractures in the very tight limestone which has little porosity (Taylor, 1982, p. 4).

There seems to be a consensus among the various geologists and developers active in the Giddings Field, that production from each of the wells comes from permeable fracture-fault systems present in the Austin Chalk Formation. One has only to inspect a map of the Giddings Field showing the hundreds of adjoining wells over a seven-county area to conclude that there are indeed countless, closely-spaced fracture-fault systems over a large area. Exactly where these fracture-fault systems extend, whether they interconnect with other adjacent systems, and to what extent, is presently subject to conjecture. The Texas Railroad Commission reports the following statistics on the Austin Chalk in 1981: Of the 2,600 wells drilled, 74.4 percent were producers, 1,480 as oil wells and 454 as gas wells (Taylor, 1982, p. 8).

The memorandum from the District Supervisor further discussed reasons for the KGS classification and stated:

The December 9, 1981 memorandum to the FILE [Exhibit 4] stated, generally, the reasons for classifying as competitive all of the Federal minerals within the boundaries of the Somerville Lake (Reservoir). As described in the above memorandum, the Austin Chalk development of the Giddings Field moved entirely around and across Lake Somerville during 1981, thus making it apparent that the entire lake area (and all Federal mineral tracts) would very likely be productive of oil and gas. The dry holes shown on the KGS map were, with two minor exceptions, drilled to shallow horizons far above the Austin Chalk and long before the Giddings Field Chalk play commenced. Note the total depth of each of these dry holes is given. The overlay (Exhibit 6) [Exhibit 6 overlays the KGS map of the Somerville Lake area which shows all wells drilled; Federal minerals, previously leased and never leased; survey boundaries, names, abstracts; and tract numbers for known Federal minerals tracts.] shows the relationship of each of the significant wells to each of the applications being appealed. The number by each of the significant well

locations refers to the detailed description and record of that well in Exhibit No. 7. Note, other oil and gas wells are also in the vicinity of the significant wells, but are generally not as close to the Federal tracts.

Also, accompanying this report is a chronology of the leasing events (Exhibit 8), and a chronology of the KGS determinations in the Somerville Reservoir area (Exhibit 8-A). These chronologies, when compared to the well completion dates (Exhibit 7), indicate the well data available at the times the various appealed noncompetitive over-the-counter lease applications were received by the USGS for KGS determinations. As these exhibits (7, 8, and 8-A) show, when completion data were finally received on wells known to be located near the applied-for-tracts, the actual completion dates varied from several months before the applications were received by the USGS to shortly thereafter. This was the case with Tract 101 in the J. Lastly Survey, A-35 (Application NM-40070). This application, which was appealed by R. L. Lyon, was received by the USGS on June 18, 1981. Although well no. 11 (completed 10-21-80) was half a mile to the west of this tract, the actual continuation of the Giddings Field across this tract and to the southeast was not definitely demonstrated until the completion data were received for well no. 14 on October 30, 1981. These data indicated that well no. 14 (K. Graham, No. 1 Houston) had actually been completed April 1, 1981, several months before NM-40070 was received by the USGS for a KGS determination. Note the six month delay in receiving the completion of well no. 14 (Exhibit No. 7). Also shown at the bottom of Exhibit No. 7 is the four month average delay from the time a well was completed by the operator, to the time this completion information was received by the USGS from Petroleum Information. Exhibit No. 9 indicates one of the attempts at obtaining official well completion data from sources other than Petroleum Information.

With specific reference to appellant's argument that there is no structure in the Austin Chalk, the District Supervisor stated in his memorandum:

The fact that there is, or is not, an anticlinal structure containing the accumulation of oil in the Giddings Field has no bearing on the classification of this entire area as a "known geologic structure" (KGS). This term, as used by the Federal government, simply refers to a Federal procedure for classifying as competitive any Federal land that has a reasonable probability of being underlain by the reservoir of a producing oil or gas field. Another definition of a KGS is that given in the U.S. Geological Survey Conservation Division's Manual (620.3.4) where it states: "A known geologic structure is technically the trap in which an accumulation of oil or gas had been discovered by drilling and determined to be productive, the limits of which include all acreage that is presumptively productive." The classic anticlinal structure is not a requirement for classifying

land as competitive. In fact, many present-day KGS classifications involve stratigraphic traps, and not structural traps. In the case of the Giddings Field, it is probably both kinds of traps. [Emphasis in original.]

In the present situation, Survey does not deny the existence of fracture systems in the Giddings area; rather, it has presented evidence which tends to establish that the Giddings Field contains traps, whether stratigraphic or structural, such that the area constitutes a KGS which is presumptively productive. The opinions and conclusions in the letters submitted by appellant are devoid of countervailing factual data which would significantly challenge Survey's findings. Accordingly, appellant has not made a clear and definite showing that the Survey determination was in error. Robert L. Lyon, 66 IBLA 141 (1982).

In addition, a determination by the Survey that certain lands are in the KGS of a producing oil and gas field does not guarantee the productive quality of the lands included in the KGS. Such a determination does no more than to announce that on the basis of geological evidence, Survey has concluded that there is a reasonable probability that the land in question is underlain by a reservoir of a producing oil and gas field. There is no prediction as to future productivity or statement as an existing fact that anything is known about the productivity of all the land included in a KGS. Vernon Benson, 48 IBLA 64 (1980).

Accordingly, pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 CFR 4.1, the decision appealed from is affirmed.

Gail M. Frazier
Administrative Judge

I concur:

Will A. Irwin
Administrative Judge

ADMINISTRATIVE JUDGE BURSKI CONCURRING IN THE RESULT:

I think the result reached in the majority decision is clearly compelled by this Board's decision in Robert L. Lyon, 66 IBLA 141 (1982), which involved other over-the-counter offers for tracts within the Giddings Field which had been rejected because of extension of the known geologic structure (KGS). Nevertheless, I am less than sanguine about the result.

A KGS is defined as "technically the trap in which an accumulation of oil or gas has been discovered by drilling and determined to be productive, the limits of which include all acreage that is presumptively productive." 43 CFR 3100.0-5(a). This definition has been applied numerous times. See e.g., Jack J. Bender, 40 IBLA 26 (1979); William T. Alexander, 21 IBLA 56 (1975); McClure Oil Co., 4 IBLA 255 (1972). For the purposes of this definition, it is immaterial whether the trap is structural or stratigraphic. Moreover, inclusion of land within a KGS does not guarantee that it is productive; rather inclusion of land in a KGS merely determines that the land overlies a "structure" in which oil or gas has been trapped and that there is production from a well on that structure. See William T. Alexander, *supra*. It does not mean that the productive areas of that structure necessarily underlay the surface of all land in the KGS. See generally E. Findley, The Definition of Known Geologic Structures of Producing Oil and Gas Fields, G.S. Cir. No. 419 (1959).

The problem presented by this case is that the Giddings Field, with one exception noted below, 1/ clearly does not involve a single structure, but, because of the extensive fracturing in the Austin Chalk, consists of numerous related, but nevertheless independent, stratigraphic as well as structural traps. In the instant case, while Survey has attempted to delineate specific wells as occasioning the extension of the KGS, in fact, it has not even contended that any of these wells, and Government tracts associated therewith, are on the same specific structure.

Survey argues, in effect, that because there is a "reasonable probability" that the tracts are underlain by a reservoir of a producing oil or gas field, that the lands are properly placed in the KGS. This, however, is not the test for KGS determinations. The test which has been universally applied (at least up to Robert L. Lyon, *supra*) is whether the land overlays a structure of a producing oil or gas field and is therefore "presumptively productive" in the absence of positive information to the contrary. Without such a known geologic structure, however, the fact that there is a "reasonable probability" that the tract is underlain by a reservoir of oil or gas is a legal irrelevancy.

There is no question that the tracts at issue involve favorable prospects for oil production. That fact alone, however, is an insufficient basis upon which to predicate a KGS determination. Normally, I would vote to

1/ I recognize that Survey made reference to a basement anticline below the Giddings Field. But Survey clearly did not premise its KGS determinations on this structure since such basement rock is, by definition, devoid of petroleum.

set aside the decision appealed from and refer the matter to the Hearings Division to permit Survey an opportunity to correlate each specific tract involved with a specific producing structure. The Board's decision in Lyon, however, examined the precise questions before us and accepted Survey's determination as to the extent of the Giddings KGS. Because I view such a precedent as clearly controlling the result herein, I concur in the result.

James L. Burski
Administrative Judge

